



YMCA Awards

Level 3 Nutrition to support
physical activity

2018

Level 3 Nutrition to support physical activity

Vitamins and minerals

Vitamins

- Organic chemicals naturally occurring in food
- Required in tiny amounts
- Essential for all chemical reactions in the body
- With few exceptions, all have to be provided from the diet
- Provide no energy

Classification of vitamins

Fat Soluble	Water Soluble
A,D,E and K	B (group) and C
Mainly supplied by fat-based foods like butter, fish oil, wheat germ, etc.	Mainly supplied by water-based foods like fruit, vegetables and whole grains
Can be stored (in liver and fatty tissue)	Cannot be stored (excreted in the urine)
Daily supply not essential	Daily supply essential
Can become toxic	Not toxic

A

Function - Good vision, healthy skin, growth

Source

- Cheese
- Eggs
- Oily fish
- Fortified low-fat spread
- Milk and milk products
- Liver and liver products

B Vitamins

Function

- Release of energy from foods
- Healthy skin

B – Thiamin

Source

- Peas
- Fresh and dried fruit
- Eggs
- Wholegrain breads
- Some fortified breakfast cereals
- Liver

B2 – Riboflavin

Source

- Milk
- Eggs
- Fortified breakfast cereals
- Rice

B3 – Niacin

Source

- Meat
- Fish
- Wheat flour
- Eggs
- Milk

B6

Source

- Pork
- Poultry (chicken, turkey)
- Fish
- Wholegrain cereals (oatmeal, wheatgerm, brown rice)
- Eggs
- Vegetables (potatoes)
- Soya beans, peanuts
- Milk
- Some fortified breakfast cereals

B12

Function - important for red blood cells

Source

- Meat
- Salmon
- Cod
- Milk
- Cheese
- Eggs
- Some fortified breakfast cereals

C

Function - healthy skin, protects cells, helps absorb iron

Source

- Oranges and orange juice
- Red and green peppers
- Strawberries
- Blackcurrants
- Broccoli
- Brussels sprouts
- Potatoes

D

Function - helps absorb calcium, strong teeth and bones

From late March/early April to the end of September, most individuals should be able to get vitamin D from sunlight

Between October and early March, there is not enough vitamin D from sunlight so must be obtained from foods

- Oily fish (salmon, sardines, herring, mackerel, fresh tuna)
- Red meat, liver
- Egg yolks
- Fortified foods (fat spreads, some breakfast cereals)

E

Function – Antioxidant

Source

- Plant oils (soya, corn and olive oil)
- Nuts and seeds
- Wheatgerm – found in cereals and cereal products

K

Function – Blood clotting, wound healing

Source

- Green leafy vegetables (broccoli, spinach)
- Vegetable oils
- Cereal grains

Minerals

- Inorganic chemicals naturally occurring in food
- Essential for many chemical reactions in the body, and structure of bones, teeth, etc.
- With few exceptions, all have to be provided from the diet
- Provide no energy
- ‘Macro’ elements needed in larger quantities than ‘micro’ elements

Minerals

Macro elements	Micro elements
Examples: Sodium Potassium Calcium	Examples: Copper Zinc Iron Selenium

Minerals

- **Sodium** - Helps keep body fluids at the right concentration and is needed for muscle and nerve activity. Salt (sodium chloride) is the main source of sodium in the UK
- **Potassium** - Regulates fluid levels and needed for nerve and muscle function, including regulating heart rhythm
- **Calcium** is needed for the growth of healthy teeth and bones. Sources of calcium include milk, cheese, eggs, wholegrain cereals, green vegetables, bread and tofu

Minerals

- **Copper** - plays a role regulating blood clotting and metabolic enzymes in the body need copper in order to develop and function properly. Also plays a role in producing and regulating cellular energy
- **Zinc** – important for a healthy metabolism and in making new cells
- **Iron** - needed for the formation of red blood cells. Sources include red meat, green vegetables, eggs, lentils and bread

Antioxidants and phytochemicals

- Vitamins A, C, and E
- Trace mineral selenium

Many 'phytochemicals' (plant compounds) are also good antioxidants, including:

- Carotenoids
- Flavonoids

A good supply of antioxidants can be obtained by eating brightly coloured fruit and vegetables

Health properties and antioxidants

- May have positive effect on cancer prevention
- Lower cholesterol and reduce risk of CHD
- Support immune system
- Have positive effect on gut bacteria
- Protect against harmful bacteria and viruses

Terminology used in nutrition

UK Dietary Reference Values (DRV)

- Values intended as guidelines and not recommendations for healthy eating
- By using these guidelines the intention is to promote the concept of health and not just avoidance of disease
- Guidelines are provided for energy, fats (saturated, mono and polyunsaturated), protein, carbohydrates (sugars, starches and starch polysaccharides NSP – fibre), vitamins and minerals

Terminology used in nutrition

Recommended Daily Amounts (RDA)

- The average amount of a nutrient that should be provided if the needs of all members of the group have to be met.

Terminology used in nutrition

Recommended Daily Intakes (RDI)

- The amount sufficient, or more than sufficient for the nutritional needs of practically all healthy people in the UK

